

Description of a new species of spider of the genus *Neoscona* (Family : Araneidae) from India and some observations on intraspecific colour variation

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Abstract. One new species *Neoscona mukerjei* sp. nov. belonging to the family Araneidae is described and its colour variation discussed.

Keywords. *Neoscona mukerjei*; colour variation.

1. Introduction

The spiders of the family Araneidae (=Argiopidae) are well-known from India, but the genus *Neoscona* is not reported so far from this country. Only some species of this genus were described by Dyal (1935) and Tikader (1975) but they were wrongly placed in the genus *Araneus*.

While examining the spider collection of Poona and surrounding areas, the author came across several new species of the genus *Neoscona*, some of which are being published elsewhere. The present paper contains descriptions of a new species of *Neoscona* spider and some observations on its intraspecific colour variation. The type specimens will be deposited in the National Collections of the Zoological Survey of India, Calcutta.

2. *Neoscona mukerjei* sp. nov.* (figures 1-5)

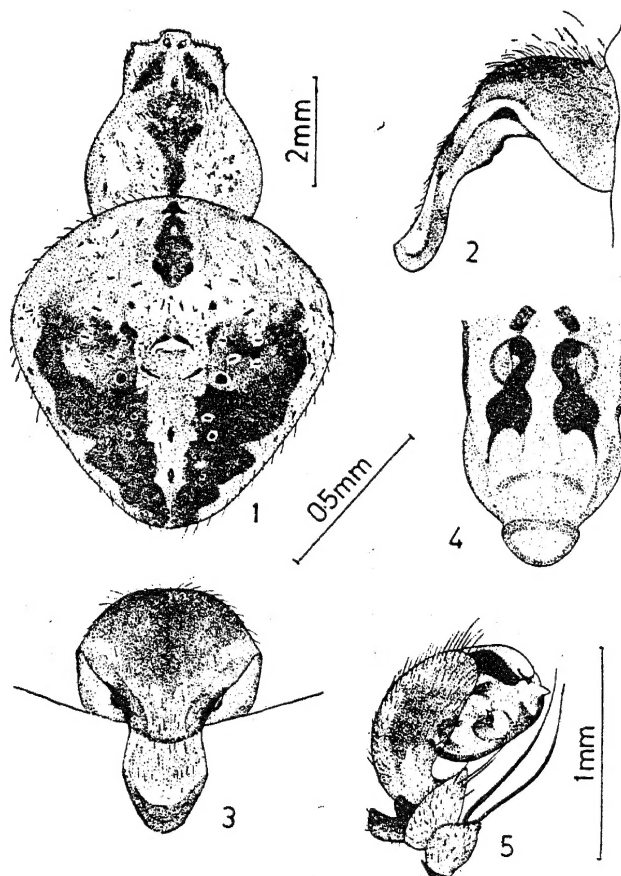
2.1. General

Cephalothorax and legs yellowish, abdomen dark brown with greyish patches. Total length 9.20 mm. Carapace 4.00 mm long, 3.30 mm wide; abdomen 6.20 mm long, 6.00 mm wide.

2.2. Cephalothorax

Longer than wide and narrowed in front, clothed with pubescence and hairs; cephalic region provided with conspicuous V-shaped dark brown patches as in

* This species is named after the late Prof. Durgadas Mukerje of Calcutta University, a well-known Entomologist.



Figures 1-5. *Neoscona mukerjei* sp. nov. 1. Dorsal view of female, legs omitted. 2. Epigyne, lateral view. 3. Epigyne, front view. 4. Internal genitalia, poster view. 5. Male palp.

figure 1; thoracic region provided with a deep longitudinal groove. Both rows of eyes recurved; ocular quad slightly longer than wide and wider in front than behind as in figure 1; anterior median eyes slightly larger than posterior medians and posterior medians encircled by black ring; lateral eyes close and each situated on a tubercle. Sternum heart-shaped, pointed behind, with a median longitudinal white broad band; labium wider than long, dark brown, distal margin with pale colour; maxillae broad and nearly reddish-yellow in colour with some dark brown patches at the proximal area and provided with distinct scopulae; chelicerae strong, yellowish and provided with moderate boss; legs long and strong, clothed with pubescence and spines; distal ends of all segments, except coxa and trochanter, provided with distinct dark brown transverse bands. Male palp as in figure 5.

2.3. Abdomen

Sub-triangular, slightly longer than wide, tapering posteriorly and clothed with fine grey pubescence and hairs; mid-dorsally provided with a club-shaped greyish white patches, arranged longitudinally as in figure 1; dorsum provided with five pairs of mid-longitudinally arranged sigilla; ventral side brownish grey but provided with a broad longitudinal dark brown bar extending from epigastric

furrow to spinnerets and guarded laterally by a pair of conspicuous dumb-bell-shaped chalk white bars; epigynal scape moderately long, provided with a deep constriction and a pair of indistinct lateral lobes, as in figures 2 and 3. Internal genitalia as in figure 4.

Type-specimens : *Holotype* female, *paratype* sixteen females, *allotype* four males in spirit.

Type-locality : Chaturshingi Hill, Poona, Maharashtra, India. Coll. Animesh Bal, 7-8-1977.

3. Discussion

This species is close to *Neoscona rumpfi* (Thorell) but differs as follows: (i) Dorsum of abdomen provided with a distinct longitudinal club-shaped whitish pattern but in *rumpfi* no such longitudinal pattern present. (ii) Cephalic region provided with V-shaped brown patch but in *rumpfi* no such patches on the cephalic region visible. (iii) Epigynal scape with a deep constriction situated at the middle point but in *rumpfi* constriction not deep and situated at the bending point. (iv) Scape with a pair of indistinct lateral lobes situated ventrally on the middle but in *rumpfi* it is conspicuous, horn-like, situated near the base.

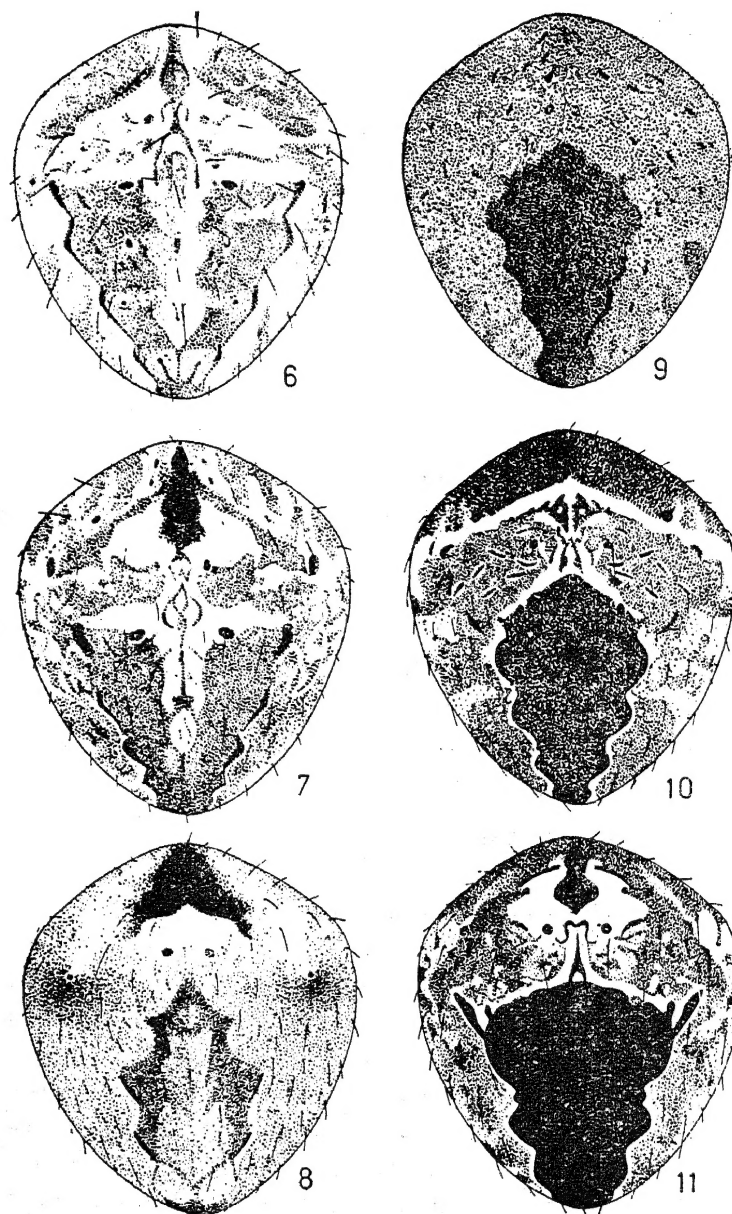
4. Intraspecific colour variation

The intraspecific colour variation is not uncommon in the spider population. During extensive collection of spiders in and around the Poona city, the present author has collected more than three hundred specimens of the species *Neoscona mukerjei*. During the study of this material he has also come across eighteen different colour patterns of this spider. A detailed study of the internal genitalia as well as epigyne of all different colour varieties revealed that all are of the same species because their epigyne and internal genitalia are identical which are the most important specific characters of spiders.

Relatively very little work has been done on the study of variation in the colour pattern of spiders in India. However Kapur (1957) reported colour variation in Coccinellidae found in Lahore. Kapur [(1962) recorded geographical colour variation in three species of Ladybird beetles.

There are many factors associated with colour variation in animals, such as (a) altitude, latitude and longitude, (b) climate, (c) rainfall, surrounding vegetation, etc.

But in the case of *Neoscona mukerjei* all colour variations are noticed in the same population of the same locality. Rainbow (1898) pointed out that spiders could change their colour according to the colour of the flower where they hide for hunting insect prey. In the present study it has been observed that the colour pattern of abdomen of all the specimens of *N. mukerjei* examined, matches well with the environment of the spider (figures 6-23). This spider hatches just at the beginning of rainy season and matures within 2/3 months' time and after the rainy

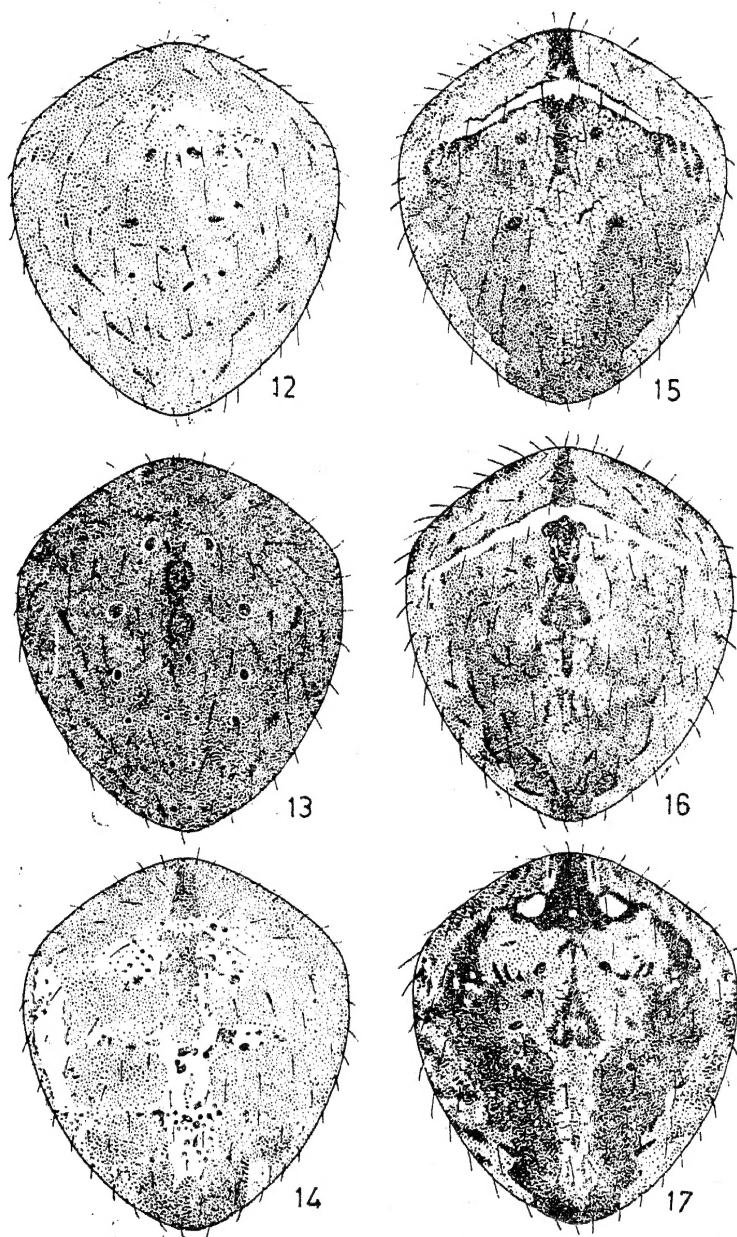


Figures 6-11. (Caption in p. 252)

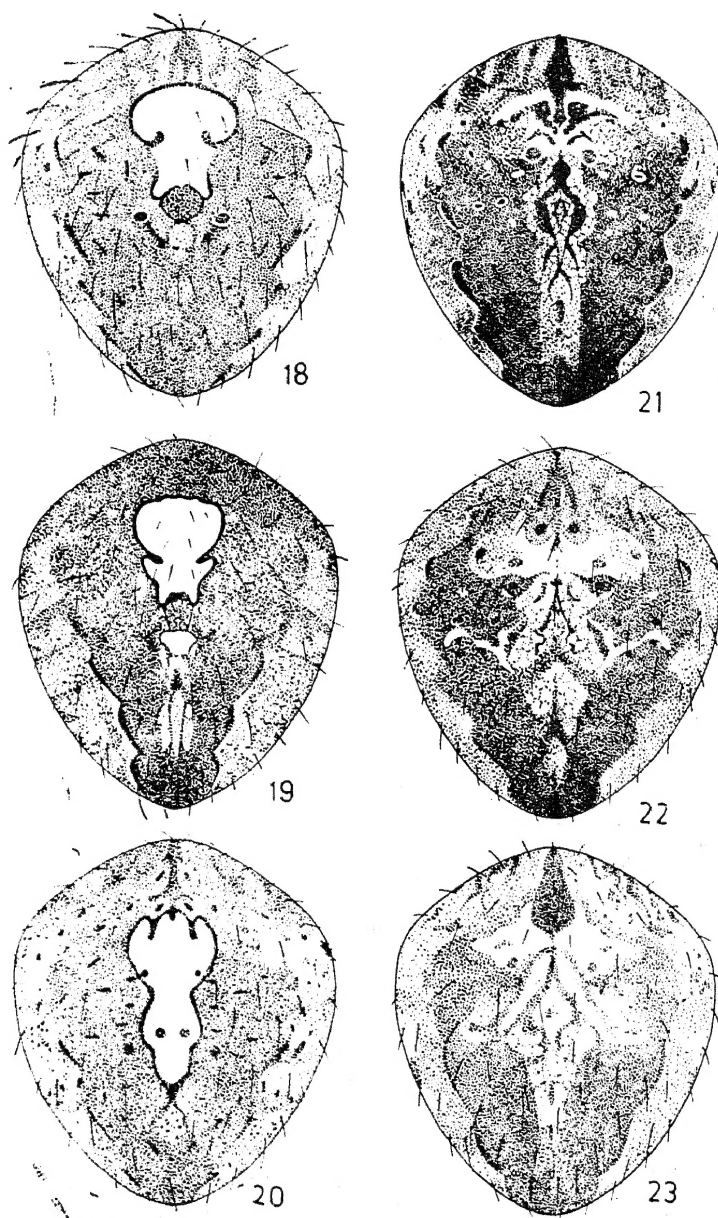
season it lays its eggs with a cocoon which lie on the ground with derbis till the next rainy season.

Acknowledgements

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Figures 12-17. (Caption in p. 252)



Figures 6-23. Different abdominal colour pattern of *Neoscona mukerjei* sp. nov.

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